

## **REMARKS**

Claims 1, 6, 7, 9 and 11-35 were pending. Claims 6 and 7 have been amended. No claims have been added or canceled. Accordingly, claims 1, 6, 7, 9 and 11-35 remain pending in the application subsequent entry of the present amendment.

## **Claim Objections**

In the present Office Action, claims 6 and 7 are objected to under 37 CFR 1.75(c) as being of improper dependent form. While Applicant does not agree with the propriety of the objections, Applicant has amended the claims in order to speed prosecution of the present application. Neither of claims 6 nor 7 refer to any other claim.

## **35 U.S.C. § 112 Rejections**

In the present Office Action, Claim 35 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. In the rejection, the Examiner states:

“The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention . . .

The specification however does not teach analyzing a first environment to identify particular characteristics and identify a second environment which has characteristics similar to the particular characteristics of the first environment and applying the trained offer generation system to the second environment.”

To assist the examiner, Applicant directs the examiner's attention to at least the text of the Description beginning page 21, line 24, wherein it describes abstracting

various characteristics in one environment (e.g., particular buying habits and tendencies) and adapting the knowledge learned/gained to other environments. Accordingly, Applicant believes claim 35 is in compliance with 35 U.S.C. § 112.

### **35 U.S.C. § 102 Rejections**

Claim 34 stands rejected under 35 U.S.C. 102(e) as being anticipated by newly cited U.S. Patent Number 6,643,645 (hereinafter “Fayyad”). In addition, claim 35 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Number 6,412,012 (hereinafter “Bieganski”). Applicant has reviewed the cited references, and believes the present claims to be patentably distinguishable. Accordingly, Applicant respectfully traverses the above rejections and requests reconsideration in view of the following comments.

Claim 34 recites a method for using a self activating offer generation system, the method comprising:

“establishing a threshold criteria for activation of the offer generation system;  
running the offer generation system as a background process in a given environment, whereby the offer generation system is trained to make offers in the given environment; and  
the offer generation system automatically self activating, in response to detecting the threshold criteria is met.”

As seen, the claimed invention recites establishing a threshold criteria “for activation of the offer generation system”, wherein the offer generation system is “automatically self activating, in response to detecting the threshold criteria is met.” In contrast, Fayyad is generally directed to scaling a predictor system to relatively large datasets by reducing an amount of data considered while maintaining a desired level of accuracy. To that end, Fayyad discloses a repeated reduction in a number of data records

transferred from a database to memory (as shown in FIG. 4) until a predetermined accuracy threshold and a predetermined performance requirement is met. The transferred data is used in prediction analysis by a recommender. In Fayyad, the prediction analysis performed by the recommender occurs regardless of whether or not the amount of data from the database is reduced. Therefore, in Fayyad, “establishing a threshold criteria” is not “for activation of the offer generation system” as recited in the claim. For example, Fayyad discloses these differences from the claimed invention in the following:

“Typically and frequently, for the recommender 306 to operate, it must load all the data within the database 302 that it needs for its analysis completely into the memory 304. Thus, as the database 302 grows in size, for the recommender 306 to continue to function properly, the memory 304 must also be increased. However, for very large databases, it is or can be impractical to increase the memory 304, either for cost reasons, and/or because the operating system on which the recommender 306 is running has reached the maximum amount of memory it is able to address. This limits the usefulness of recommenders in voluminous data environments. Furthermore, even if the server hosting the recommender system has enough memory, the response times resulting from lookups into a very large memory can be very prohibitive. Hence, from a performance enhancement perspective, the retrofit methods described in this invention will be very useful.” (Fayyad, col. 6 lines 45-61). (emphasis added).

“In one embodiment, a method repeats reducing the data by a number of records, until an accuracy threshold or a performance requirement is met. If the accuracy threshold is met first, the method repeats removing a highest-frequency dimension from the data, until the performance requirement is also met. The reduced data is provided to the recommender system, which generates predictions based on the reduced data, and a query . . . In other embodiments, clustering of the data and/or the query is also performed as an alternative mechanism for reduction.” (Fayyad, Abstract). (emphasis added).

“The pre-processor component 404 is designed to reduce the amount of data from the database 302 that is loaded into the memory 304, and thus that is analyzed by the recommender 306 . . . Desirably, the pre-processor component reduces the data such that both a predetermined accuracy threshold and a predetermined performance requirement, as maybe mandated by the end use for the recommender system, are still met. The accuracy threshold, for example, may determine how

accurate the predictions must be, while the performance requirement, for example, may determine how quickly the predictions must be returned by the recommender, although the invention is not limited to either example. By reducing the data, in other words, the pre-processor component 404 can ensure that the recommender 306 is able to scale to large data environments.” (Fayyad, col. 7 lines 10-28). (emphasis added).

As seen above and in FIG. 4, by using a predetermined accuracy threshold and a predetermined performance requirement, the pre-processor 404 reduces the amount of data from a database 302 that is loaded into a memory 304. Thus, the recommender 306 is able to scale to larger data environments. However, the recommender 306 does not use the threshold criteria for activation of an offer generation system as recited. Further, Fayyad nowhere discloses or suggests that the recommender 306 is “automatically self activating, in response to detecting the threshold criteria is met”. For at least these reasons, claim 34 is patently distinct from the cited art.

In addition to the above, claim 34 further recites:

“running the offer generation system as a background process in a given environment, whereby the offer generation system is trained to make offers in the given environment”

In the present Office Action, no specific citations of Fayyad were given to suggest where Fayyad discloses these features. Rather, a variety of citations were provided for the claim as a whole. Applicant has reviewed these disclosures of Fayyad and submits Fayyad nowhere teaches the above features of claim 34. Regarding the remainder of the document, FIG. 5 of Fayyad provides an embodiment of a method for retrofitting a recommender system. However, the description for the method nowhere teaches running the recommender system “as a background process in a given environment”, whereby the recommender system “is trained to make offers in the given environment”. As noted

above, the method of Fayyad reduces the data stored in a memory, which is used by the recommender system as described above and in the following:

“Referring now to FIG. 5, the method includes three main parts: 500, 502 and 504. In 500, pre-processing is performed against data in a database, and also optionally against a query. Specifically, the data is reduced such that both a predetermined accuracy threshold and a predetermined performance requirement are met.” (Fayyad, col. 7 line 66 to col. 8 line 4).

“In 502, the data is provided to a recommender system, so that the system can generate recommendations based on a query provided thereto as well as on the data as reduced.” (Fayyad, col. 8 lines 29-31).

“Finally, in 504, any post-processing that is necessary to account for the predictions being based on the data as reduced in pre-processing (in 500)—as opposed to the data itself—is performed. Not all embodiments of the invention require such post-processing, however.” (Fayyad, col. 8 lines 45-49).

As seen from the above, there is no disclosure that the recommender system is run “as a background process in a given environment”, whereby the system is “trained to make offers in the given environment.” For these additional reasons, claim 34 is patently distinguishable from the cited reference.

In addition to the above, Applicant submits claim 35 is patentably distinguishable from the cited art. Claim 35 generally recites a method for applying and training an offer generation system in a first environment, identifying a second environment with similar characteristics, and applying the trained system (optimized for use in the first environment) to the second environment. In particular, the method comprises:

“applying an offer generation system within a first environment;  
training the offer generation system within the first environment to  
create a trained offer generation system which is optimized for  
use in the first environment;  
analyzing the first environment to identify particular characteristics;

identifying a second environment which has characteristics similar to the particular characteristics; and  
applying the trained offer generation system to the identified second environment.”

As with claim 34, in the present Office Action, no specific disclosure of Bieganski was given to suggest where Bieganski teaches the individual features of claim 35. Applicant has reviewed the disclosures of Bieganski and submits claim 35 is patently distinguishable from Bieganski.

For example, in the present Office Action, it is suggested that col. 19, line 1 to col. 20, line 64 of Bieganski teaches the features of claim 35. However, nowhere in these disclosures does Bieganski teach applying and training an offer generation system in a first environment, identifying a second environment with similar characteristics, and applying the trained system to the second environment. Rather, Bieganski is generally directed to producing “compatible-aware” recommendations to a user based upon user input or preferences in a given environment. Regarding the disclosures and FIG. 12 of Bieganski, the application using a recommender system 1212 is able to provide compatibility-modified recommendations that are subsequently updated to reflect each customer product request. These recommendations are dependent on the business objectives of the marketer. Therefore, the recommendations may include all products in an inventory or may be limited to featured products or products with specific attributes, such as only in-stock products or high mark-up products. However, there is no disclosure of the above mentioned features and the multiple environments as recited.

Although many content areas are disclosed in the description of FIG. 13, no specific first environment is disclosed let alone “analyzing the first environment to identify particular characteristics”. The same is true for the processing system of FIG. 14A-14B. Bieganski discloses the content areas and benefits in the following:

“Many other content areas can similarly be enhanced by compatibility modified recommendations. Examples include music in various forms

(e.g., sheet music, music recordings, music video recordings, and on-demand music systems including jukeboxes and cable-TV music request services), advertisements, marketing literature and product offers, consumable goods including groceries and office supplies, dining and entertainment services (e.g., arranging a set of dinner and/or theater reservations that complement each other), financial service products (e.g., recommending financial service products compatible with the customer's goals and portfolio), real estate and home furnishings, automobile-related goods and services, travel-related goods and services, media of various forms (e.g., audio, video, images), computer products and services, art works, publications and documents. In each of these areas, and many others, the benefit of compatibility modified recommendations is the added value to the customer and to the marketer when product recommendations are consistent with prior purchases, concurrent purchases, and each other." (Bieganski, col. 19 line 55 to col. 20 line 7). (emphasis added).

As seen from the above, Bieganski is directed to making recommendations for a given customer in a given environment (e.g., based on past purchases). Bieganski also does not disclose the training and optimization features as recited in the claim. For at least these reasons, claim 35 is patently distinct from the cited art.

### **35 U.S.C. § 103 Rejections and Walker Reference**

Claims 1, 6, 7, 9, and 11-26 stand rejected under 35 U.S.C. 103 (a) as being unpatentable over newly cited U.S. Patent Number 6,397,193 (hereinafter "Walker") in view of Bieganski.

The American Inventors Protection Act of 1999 amended 35 U.S.C. § 103(c) to state that art which qualifies as prior art only under § 102(e), (f) or (g) is not available for rejections under § 103 if that art and the subject matter of the application under examination were owned by or subject to an obligation of assignment to the same assignee at the time the invention was made. This change to 35 U.S.C. § 103(c) is effective for any application filed on or after November 29, 1999.

The present application is an application for patent filed after November 29, 1999. At the time the invention was made, the subject matter of present application and the Walker patent were both owned by or subject to an obligation of assignment to the same assignee, Walker Digital, LLC, Stamford, CT, as evidenced by the assignment for the present application recorded in the PTO at reel 012804, frame 0517, and the assignment for the Walker patent recorded in the PTO at reel 010648, frame 0653. Therefore, Walker is not available as prior art for rejections under 35 U.S.C. § 103.

In view of the above, withdrawal of the rejections of claims 1, 6, 7, 9, and 11-26 is requested.

#### **Additional 35 U.S.C. § 103 Rejections**

Claims 27 and 33 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Bieganski in view of newly cited U.S. Patent Number 6,477,571 (hereinafter "Ross"). Additionally, claims 28-32 stand rejected under 35 U.S.C. 103(a) as being anticipated by Bieganski in view of Ross, and further in view of "Generalization in XCS", Stewart W. Wilson, submitted to ICML '96 Workshop on Evolutionary Computing and Machine Learning (hereinafter "Wilson"). Applicant has reviewed the cited references, and believes the present claims to be patentably distinguishable. Accordingly, Applicant respectfully traverses the above rejections and requests reconsideration in view of the following discussion.

For example, claim 27 recites a method of using at least one of a genetic program or a genetic algorithm in generating an offer, the method comprising:

“generating an offer for the customer based on at least one of a genetic program or a genetic algorithm, in which the at least one of a genetic program or a genetic algorithm comprises:



matching the bit stream to one or more classifiers of a population of classifiers, each classifier of the population of classifiers comprising a condition and an action to perform if the condition is met; determining one or more expected rewards for each matching classifier; and selecting a given classifier to make the offer, the given classifier comprising a given action; and outputting the generated offer.”

Applicant has reviewed the cited art and submits claim 27 is patently distinguishable from Ross taken alone or in combination. In the present Office Action, it is suggested that col. 1 line 38 to col. 4 line 44 and col. 6 lines 38-59 of Ross teaches certain features of claim 27 that are not taught by Bieganski. In particular it is stated:

“Bieganski does not teach the genetic program or algorithm includes translating the order information to a bit stream; generating the offer based on genetic program or algorithm comprising matching the bit stream to one or more classifiers of a population of classifiers; Ross teaches translating order information (transaction) to bit stream (alphanumeric string) and matching the bit stream to a classifiers.”

However, claim 27 recites “each classifier of the population of classifiers comprising a condition and an action to perform if the condition is met”. Ross does not disclose or suggest these features. Rather, Ross teaches matching a service request to a generated service request identifier. The service request is a string that identifies the sequence of informational packets therein and it can be extremely long such as 8000 characters. An informational packet is described by FIG. 3 of Ross and it does not include “a condition and an action to perform if the condition is met”. A service request identifier is simply a more compact representation of the service request, stored in a service request table 58. The service request identifier is then placed in a text string and this text string is compared to a regular expression in order to determine the occurrence of a transaction. The regular expression is a representation of a formal language in which operators describe the occurrence and/or nonoccurrence of strings of symbols of the language.

Examples of an informational packet, used to derive a service request string, and a regular expression are disclosed by Ross in the following:

“As can be seen from FIG. 3, an informational packet 38 typically includes a node address portion 40 , which identifies the source and destination of the informational packet, a port number portion 44 which identifies the source and destination ports, and an additional information portion 48. Depending upon the application, the additional information 48 can be, e.g., a database request, a file system request or an object broker request, as one skilled in the art will understand.” (Ross, col. 5 lines 37-45).

“Next, in step 124, the regular expression matcher 62 finds the first regular expression that matches the text string output from step 120. This is performed by comparing the text string against every regular expression in the regular expression library 66. In the library 66, each regular expression is represented as a text string that includes request identifiers and regular expression operators, as described in the summary section hereinabove.” (Ross, col. 8 lines 32-39).

“A formal language corresponding to a regular expression can be used to define a transaction as a language using service request representations as the symbols of the language. That is, service request representations become the “alphabet” of such a regular language, and occurrences of the transaction become string expressions represented in this alphabet. By way of example, the transaction, T, defined by the regular expression  $A^* B^+ C? D [E F G]$  specifies that service request A can be present 0 or more times; service request B must be present 1 or more times; service request C may be absent or present only once; service request D must be present only once; and only one of service requests E, F, and G must be present. Only if all of these conditions are met, in the specified order, will an occurrence of transaction T be recognized.” (Ross, col. 2 lines 55 to col. 3 line 2).

As seen above, neither the service request identifier nor the regular expression comprises “a condition and an action to perform if the condition is met”. Further, Applicant has reviewed Bieganski and Ross and submits these references taken alone or in combination do not teach at least the features “determining one or more expected rewards for each matching classifier” and “selecting a given classifier to make the offer, the given classifier comprising a given action”. The present Office Action provides no disclosures

for these features. For at least these reasons, claim 27 is patently distinct from the cited references taken alone or in combination.

As each of dependent claims 28-32 include the features of independent claim 27 on which they depend, each of the dependent claims are patentably distinct for at least the above reasons as well.

**CONCLUSION**

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/6124-00100/RDR.

Respectfully submitted,

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